

American Museum Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK, N. Y. 10024

NUMBER 2422

JUNE 23, 1970

Moths of the Genus *Holochroa* (Lepidoptera, Geometridae) from the Tres Mariás Islands, Mexico

BY FREDERICK H. RINDGE¹

The genus *Holochroa* Hulst was recently revised by me (1961, p. 140); it contained two species. One species, *dissociaria* (Hulst), occurs in the southwestern United States in two subspecific populations, with a single specimen being known from Durango. The second species, *unicolor* (Druce), occurs in the Mexican states of Sinaloa, Colima, Guerrero, and Morelos.

Dr. Paul H. Arnaud, Jr., of the California Academy of Sciences, recently sent to me for identification a number of the Geometridae from western Mexico. Included were two species from the Tres Mariás Islands that proved to be undescribed members of *Holochroa*. The Tres Mariás Islands are some 60 miles off the coast of Nayarit; it came as quite a surprise to find two endemic species of the genus *Holochroa* there. Both species were collected on the two larger islands of the group, namely María Madre Island and María Magdalena Island.

As these two species double the known members of the genus, keys for the entire genus are given.

KEY TO SPECIES OF *HOLOCHROA* BASED ON MACULATION

1. All wings above a unicolorous whitish gray *ochra*
Upper surface of wings brown or gray 2

¹ Curator, Department of Entomology, the American Museum of Natural History.

- 2(1). Upper surface of wings brown; hind wings above concolorous with forewings 3
 Forewings above grayish brown, suffused with brown in basal and subterminal areas; hind wings above paler than forewings 4
- 3(2). Upper surface of wings an even, pale brownish gray, with weakly defined cross lines *unicolor*
 Upper surface of wings a mottled darker brown, with cross lines varying from obsolescent to well defined *balia*
- 4(3). Upper surface of forewings a more or less unicolorous grayish brown, the secondaries slightly paler *dissociaria dissociaria*
 Upper surface of forewings contrastingly colored, with white basal and subterminal areas separated by grayish black median area, the secondaries contrastingly white *dissociaria varia*

BASED ON MALE GENITALIA

1. Valve simple 2
 Valve with a sclerotized arm at base *unicolor*
- 2(1). Aedeagus with large curved spine in vesica *dissociaria*
 Aedeagus without spine in vesica 3
- 3(2). Anellus with paired lateral structures having anterior and posterior arms *ochra*
 Anellus with paired lateral structures having posterior arms only *balia*

BASED ON FEMALE GENITALIA¹

1. Signum extending transversely *dissociaria*
 Signum extending longitudinally 2
2. Lamella postvaginalis elongate, sclerotized *unicolor*
 Lamella postvaginalis membranous *balia*

Holochroa ochra, new species

Figures 1, 5

This small species can be separated from all the other known members of the genus by the pale gray color of the upper surface of the wings.

Male: Head with vertex white; front flat, blackish brown, with dark grayish brown lateral areas above middle and with white band across bottom; palpi rising to near middle of eye, extending beyond eye a distance of one-half length of eye, cream-colored and with some lateral black scaling; antennae with about 55 segments, longest pectinations being eight to nine times as long as basal antennal segments. Thorax above white, with a few grayish black scales, and with black scales between back of head and thorax; below whitish gray; legs whitish gray, with pale brown scaling distally, ends of segments white. Abdomen above white, becoming whitish gray distally, and having dark brown and black scales at ends of segments, this being strongest on second segment; below paler.

¹ The females of *ochra* are unknown.

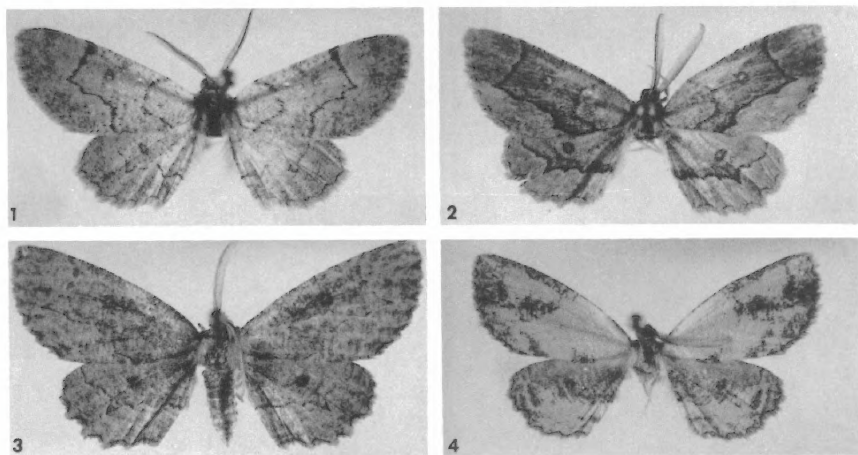


FIG. 1. *Holochroa ochra*, new species, holotype.

FIGS. 2-4. *H. balia*, new species. 2. Holotype. 3, 4. Paratypes. All $\times 1.6$.

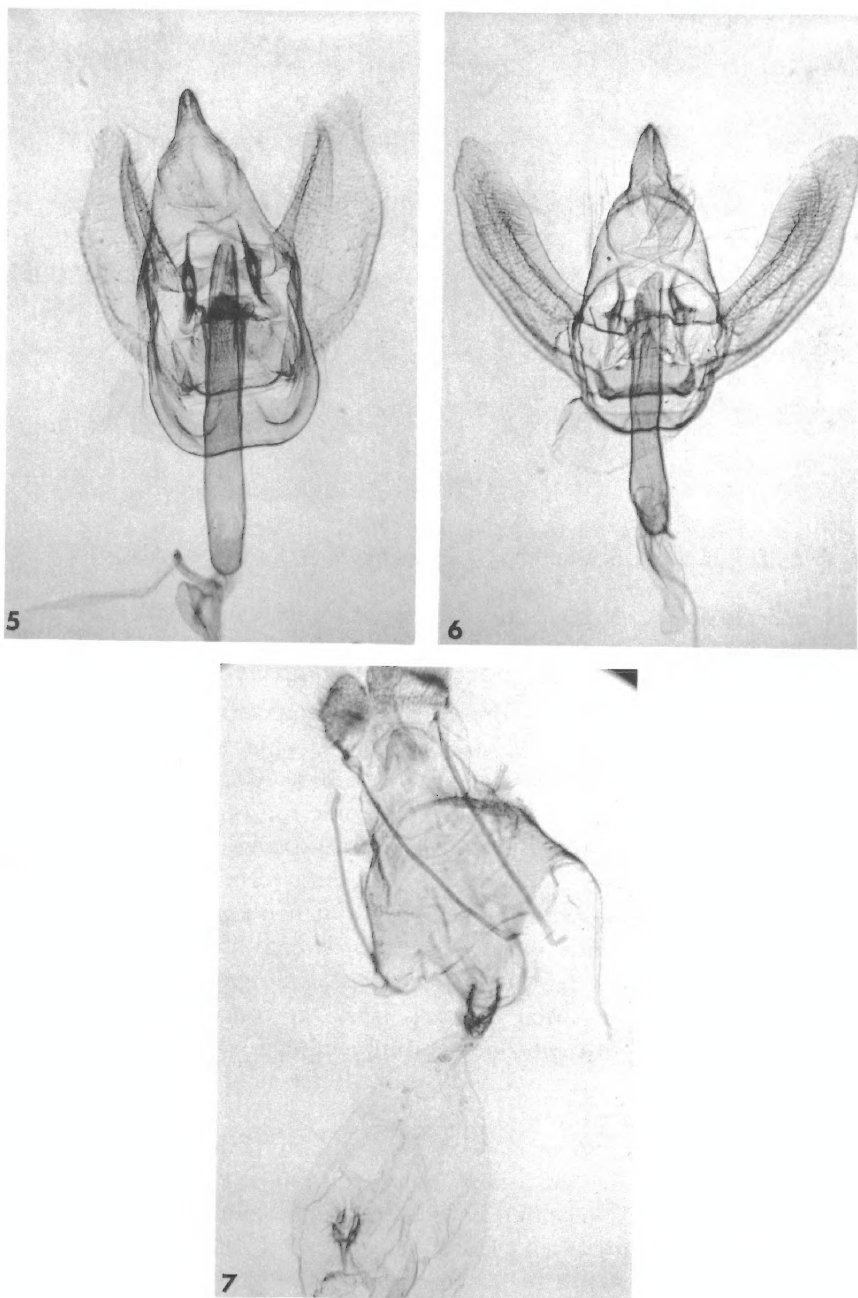
Upper Surface of Wings: All wings unicolorous white, with pale grayish brown tint in some specimens, and with a few scattered brown and blackish brown scales; cross lines black, slender; forewings with t. a. line arising on costa about one-fifth of distance from base, partially represented, curving outwardly into middle of wing, then basad to meet inner margin one-fourth of distance from base; discal spot round, inconspicuous; median line obsolescent, in some specimens represented on costa and in lower portion of wing; t. p. line arising on costa two-thirds of distance from base, going outward to, and forming point on, vein M_3 , then broadly concave to inner margin at five-eighths distance from base, with outward tooth on vein Cu_1 ; subterminal line faintly indicated in some specimens by nebulous, incomplete, pale grayish brown band; terminal line of intravenular black spots; fringe concolorous with wing. Hind wings with discal spot more prominent than on forewings; extra-discal line complete, irregularly W-shaped; terminal line complete, reduced opposite vein endings.

Under Surface of Wings: All wings grayish white, becoming pale brown distally; cross lines weakly reflected from upper surface; all discal spots large, black; terminal line absent; fringe concolorous with wing.

Length of Forewing: 12 to 15 mm.; holotype, 15 mm.

Female: Unknown.

Male Genitalia: Uncus tapering, apex curved ventrally, terminating in blunt point; gnathos complete, with slender, sclerotized band; valves simple, tapered, rounded apically, with sclerotized costa extending four-



FIGS. 5, 6. Male genitalia. 5. *Holochroa ochra*, new species, holotype. 6. *H. balia*, new species, holotype.

FIG. 7. Female genitalia of *H. balia*, new species, allotype.

fifths of length of valve, sacculus with weak ridge and slightly more heavily sclerotized than remainder of valve; anellus with strongly developed, well-separated, paired structures, anterior and posterior prongs elongate, of equal length; juxta subrectangular, with small lateral indentations on posterior margin, and with large, pointed median projection; aedeagus slender, equal in length to combined lengths of uncus, tegumen, and saccus; vesica unarmed.

Female Genitalia: Unknown.

Types: Holotype, male, village, María Madre Island, Tres Mariás Islands, Mexico, May 14, 1925 (H. H. Keifer); the genitalia of the type are mounted on slide F.H.R. No. 15623. Paratypes, all from the Tres Mariás Islands, Mexico: same data as type but May 15, 1925, two males; María Magdalena Island, May 19, 1925 (H. H. Keifer), nine males.

The holotype is in the collection of the California Academy of Sciences; paratypes are in the collections of that institution and of the American Museum of Natural History.

Remarks: A total of 12 male specimens and two genitalic dissections have been examined. There is a relatively small amount of variation in color and in the strength of the cross lines in the type series.

Etymology: The specific name *ochra* is derived from the Greek substantive $\omega\chi\rho\alpha$, meaning pale or wan.

***Holochroa balia*, new species**

Figures 2-4, 6, 7

The upper surface of the wings is brown, varying from plain to mottled, and the outer margin of the hind wings is scalloped.

Male: Head with vertex pale grayish brown; front rounded, dark brownish gray, tending to have paler stripe down center and across bottom; palpi rising to middle of eye, extending beyond eye a distance of two-thirds length of eye, grayish brown; antennae with about 53 segments, longest pectinations about eight times as long as basal antennal segments. Thorax above covered with mixture of pale gray, grayish brown, and dark brown scales, having prominent collar, patagia, and posterior tuft; below pale grayish brown; legs grayish brown or brownish gray, with scattered dark brown scales. Abdomen above with mixture of pale gray, grayish brown, and brownish gray scales, with all or part of second segment blackish brown; below paler.

Upper Surface of Wings: All wings grayish brown, with variable number of pale gray and brownish gray scales, the color varying from smooth and even to strongly mottled; cross lines black, varying from obsolescent to strongly represented; forewings with t. a. line arising about one-

fourth of distance from base, curving outwardly into cell, angled across middle of wing, then inwardly oblique to meet inner margin one-fourth of distance from base; median area varying from concolorous with remainder of wing to being somewhat darker; discal spot round, large, black, with pale gray scales in center; median line obsolescent, weakly indicated in lower portion of wing in some specimens; t. p. line arising on costa about three-fourths of distance from base, curving outward to, and forming point on, vein M_3 , then angled basad to cell Cu_2 , curving outward and then meeting inner margin about in center; subterminal line absent; terminal line varying from black to grayish brown, interrupted by veins; fringe concolorous with wing. Hind wings with prominent discal spot; extradiscal line complete, with outward tooth on vein M_3 ; terminal line and fringe as on forewings.

Under Surface of Wings: All wings light brownish gray, with slightly darker, broad, nebulous subterminal band; discal spots black, large; cross lines varying from obsolescent to prominent; terminal line brownish gray, narrow; fringe concolorous with wing.

Length of Forewing: 14 to 18 mm.; holotype, 16 mm.

Female: Similar to male (as far as can be told from the single worn specimen).

Length of Forewing: 19 mm. (allotype).

Male Genitalia: Uncus tapering, apex with small posterior keel and with ventrally directed blunt point; gnathos complete, weakly sclerotized ventrally; valves simple, apically tapered, with bluntly pointed apices, with sclerotized costa extending about five-sixths of length of valve, sacculus with weak ridge and very slightly more heavily sclerotized than remainder of valve; anellus with strongly developed, well-separated, paired structures, with elongate posterior prong only; juxta subrectangular, about three times wider than long, with small lateral indentations on posterior margin, and with elongate, pointed median projection, in length about twice as long as length of juxta; aedeagus slender, shorter than combined lengths of uncus, tegumen, and saccus; vesica armed with small, inconspicuous, weakly sclerotized strip.

Female Genitalia: Sterigma membranous, with lamella antevaginalis a very slender, elongate, U-shaped, sclerotized rod extending anteriorly to beyond ostium; ductus bursae small, sclerotized, extending anterodorsally, slightly tapering anteriorly; ductus seminalis arising dorsally at junction with ductus bursae and corpus bursae; latter large, ovoid, membranous; signum longitudinally stellate, with anterior margin produced cephalad in form of long projection.

Types: Holotype, male, village, María Madre Island, Tres Marías

Islands, Mexico, May 14, 1925 (H. H. Keifer); allotype, female, María Magdalena Island, Tres Mariás Islands, Mexico, May 19, 1925 (H. H. Keifer). The genitalia of the holotype are mounted on slide F.H.R. No. 15625, and of the allotype on No. 15782. Paratypes, all from the Tres Mariás Islands, Mexico: same data as holotype, May 14, 15, 16, 1925, nine males; same data as allotype, 10 males.

The holotype and allotype are in the collection of the California Academy of Sciences; paratypes are in the collections of that institution and of the American Museum of Natural History.

Remarks: A total of 21 specimens (20 males and one female) and three genitalic dissections (two males and one female) have been studied.

This species is quite variable in maculation. Four of the males, including the holotype (fig. 2), have the cross lines strongly represented on relatively pale and evenly colored wings; 16 males and the one female have rather inconspicuous cross lines on darker and more mottled wings (fig. 3); one male has much of the upper surface of the wings broadly suffused with pure white scaling that obliterates any trace of the cross lines, although the discal spots are still present (fig. 4).

Etymology: The specific name *balia* is the feminine singular of the Latin *balius*, meaning dark, swarthy, chestnut colored.

BIBLIOGRAPHY

RINDGE, FREDERICK H.

1961. A revision of the Nacophorini (Lepidoptera, Geometridae). Bull. Amer. Mus. Nat. Hist., vol. 123, pp. 87-154.

